

A comparison of nutritional-risk screening tools in an acute specialist cardio-thoracic NHS Trust

E. M. Robson¹, G. V. Ravenhill¹, F. Gorman¹, M. Carby¹ and S. Collins²

¹Royal Brompton and Harefield NHS Trust, Harefield Hospital, Hill End Road, Harefield, Middlesex UB9 6JH, UK and ²Royal Brompton and Harefield NHS Trust, Royal Brompton Hospital, Sydney Street, London SW3 6NP, UK

Rates of malnutrition in hospitals are known to be high (20–60%). Complications include increased length of stay, increased risk of infection, higher complication rates during illness and following surgery and an increased mortality, as well as impaired mental and physical function and delayed recovery⁽¹⁾. Early recognition of all hospital inpatients at risk of these effects of poor nutritional status should therefore be a priority. Results from a previous audit of risk screening undertaken in the Royal Brompton and Harefield NHS Trust (RBHT) found that 83% of patients were screened on admission using a locally-designed screening tool. However, nursing and dietetic staff obtained different individual risk factor scores, particularly clinical stress factor for which 63% of scores were different, demonstrating poor inter-observer reliability.

In order to determine the most appropriate nutritional-risk screening tool for use at the RBHT, a comparison was made between the malnutrition universal screening tool (MUST)⁽²⁾ and the RBHT nutrition risk score (RBHNRS), using the subjective global assessment (SGA)⁽³⁾ as a standard for comparison. Each patient was screened using both tools by two different nurses and an SGA assessment was completed for each patient by the dietitian.

Data were collected in January and February 2007. Patients were given an information sheet and verbal consent was obtained. Forty-six patients were recruited from a variety of clinical areas.

There was no difference for ease of use (RBHNRS v. MUST $P=0.624$). MUST took significantly less time to complete (RBHNRS, mean 5.7 min; MUST, mean 4.4 min; $P=0.001$). There was good inter-observer reliability with both tools, with no significant difference between the scores of each nurse with either RBHNRS ($P=0.141$) or MUST ($P=0.09$). Using kappa (95%CI) the MUST tool [k 0.25 (0.229, 0.271)] had better agreement with SGA than the RBHNRS [k 0.098 (-0.31, 0.277)], but neither had a strong agreement with SGA.

SGA....	RBHNRS				MUST			
	Low	Med	High	Total	Low	Med	High	Total
Well-nourished	31	22	9	62	44	10	8	62
Moderately malnutrition	5	6	15	26	8	1	17	26
Severely malnourished	0	0	2	2	0	0	2	2
Total	36	28	26	90	52	11	27	90
% Total	40	31	29	100	58	12	30	100

All patients considered severely malnourished were classified as high risk using both tools. RBHNRS misclassified forty-six (50%) and MUST misclassified thirty-five (39%) when compared with SGA assessment.

There would be no expected difference in referrals to the dietetic department for those requiring intervention as both tools found similar numbers of patients at high risk (RBHNRS 29%, MUST 30%). The RBHNRS categorised more patients as being at moderate risk (twenty-eight; 31%) than MUST (eleven; 12%), which may be because RBHNRS uses transient medical factors that may or may not affect nutritional status.

Limitations of the present study include the fact that comparison between SGA and risk screening, although useful, is not a true representation of comparison with a gold standard, because SGA assesses current nutritional state and screening tools assess risk.

Following this comparison RBHT has adopted MUST for screening nutritional status. Implementation of this change includes the development of robust care plans, supporting documentation, training packages and regular audit.

1. National Institute for Health and Clinical Excellence (2006) *Nutritional Support in Adults: Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition*. NICE Clinical Guideline no. 32. London: NICE.
2. Malnutrition Advisory Group (2003) *The MUST Report. Nutritional Screening of Adults: A Multidisciplinary Responsibility*. Maidenhead, Berks.: BAPEN.
3. Detsky AS, McLaughlin JR, Baker JP, Johnson N, Whittaker S, Mendelson RA & Jeejeebhoy KN (1987) *J Parenter Enteral Nutr* 11, 8–13.